



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/807,214

03/22/2004

Mark Lynn Jenson

1327.008us2

3294

40064

7590

12/18/2006

LEMAIRE PATENT LAW FIRM, P.L.L.C.

PO BOX 11358

ST PAUL, MN 55111

EXAMINER

CREPEAU, JONATHAN

ART UNIT

PAPER NUMBER

1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

12/18/2006

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

8

<b>Office Action Summary</b>	<b>Application No.</b> 10/807,214	<b>Applicant(s)</b> JENSON ET AL.	
	<b>Examiner</b> Jonathan S. Crepeau	<b>Art Unit</b> 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21-41 and 55-87 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 32-34, 38-41, 67, 68, 70-78 and 80-87 is/are allowed.
- 6) ☒ Claim(s) 21-23, 28-30, 35-37, 55-62, 69, and 79 is/are rejected.
- 7) ☒ Claim(s) 24-27, 31 and 63-66 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/6/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office action addresses claims 21-41 and 55-87. Applicant's arguments with regard to the 35 USC 112 first paragraph rejection are persuasive and the rejection is withdrawn. In particular, it is clear in Figure 26A that the integrated circuit functions as the substrate and that the battery and insulating layer are deposited on opposite sides of the integrated circuit. Applicant's arguments with regard to the Thomas reference are also persuasive and the 35 USC 103 rejection is withdrawn. As such, claims 32-34, 38-41, 67, 68, 70-78, and 80-87 are allowed herein and claims 24-27, 31, and 63-66 are objected to as containing allowable subject matter. However, claims 21-23, 28-30, 35-37, 55-62, 69, and 79 remain rejected under 35 USC 103 over the Meitav reference. Accordingly, this action is made final.

### ***Claim Rejections - 35 USC § 103***

2. Claims 21-23, 28-30, 35-37, 55-62, 69, and 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meitav et al (U.S. Patent 6,576,365). The reference is directed to an assembly wherein a plurality of electrochemical cells (comprising electrodes 48 and electrolytes 50) are stacked vertically and horizontally (see Fig. 5). Cells are disposed horizontally adjacent to each other on a substrate (32). The substrate can be a conductive polymer or metal foil (see col. 6, line 54).

The reference does not expressly teach that a battery and a capacitor are located next to each other either in a vertical or horizontal direction as recited in the instant claims. However, the reference teaches in column 1, line 30 that “further, the present invention is more versatile for achieving inter-cell or inter-stack connections in series, parallel, or combinations thereof and for achieving hybrid packs of a battery or batteries combined with a capacitor or capacitors in a single package.” As such, this passage provides sufficient guidance for the artisan to create hybrid systems of batteries and capacitors using the various cells of Meitav et al. Therefore, the use of any combination of batteries and capacitors within a two-dimensional array shown in Fig. 5 of Meitav would be rendered obvious to the skilled artisan.

The reference further does not expressly teach that the battery and capacitor are made by successively depositing a plurality of thin-film layers on the substrate, as recited in claims 21, 28, and 29, 30, and 37.

However, the claimed method steps are not considered to distinguish over the method of Meitav. In the reference, Figure 4 suggests that the individual cell layers (48, 50) are assembled to a substrate (32), but the order of assembly is not clear. The instant claims require successive deposition on the substrate of the layers forming the battery and capacitor. However, in general, the order of method steps is not considered to distinguish over a reference unless a new or unexpected result is shown (MPEP 2144.04). In this case it would be obvious to deposit the individual battery and capacitor layers successively on the substrate as opposed to, for example, attaching the individual layers to each other and then attaching the aggregate structures to the substrate. See also *In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

The reference further does not teach that the assembly is curved so as to have a concave face and a convex face, as recited in claims 35, 60-62, 69, and 79. However, it has been held that changes in shape are generally not patentably significant unless a new or unexpected result is achieved (MPEP 2144.04). As such, the claimed configuration is not considered to distinguish over the reference.

The reference further does not expressly teach the substrate species recited in claims 57-59. However, at column 7, line 23, the reference teaches the following:

Alternatively, the common and terminal current collectors 20 and 22 may comprise any number of layers. The combination of layers and materials may be adjusted to achieve a desired combination of features including stability, lateral conductivity, interfacial contact resistance with the conductive polymer layer, pressure insensitivity, solderability, creep, passivation, contact resistance, and permeability to the electrolyte, as well as, achieving the desired performance characteristics of the overall energy storage component.

Thus, it is seen that the reference contemplates a wide variety of materials and configurations for the substrate/current collectors. As such, the claimed materials would be rendered obvious by the reference.

### *Response to Arguments*

3. Applicant's arguments filed October 2, 2006 regarding the Meitav reference have been fully considered but they are not persuasive. Applicants state that Meitav does not describe or suggest successively depositing a series of thin film layers on the substrate, but instead discloses the formation of a battery by stacking individual parts that are formed prior to stacking.

However, it is also believed that even if specific battery (capacitor) layers are pre-fabricated, as asserted by Applicants, the step of placing these layers successively onto a substrate reads on the claim language. It is submitted that it would be well within the skill of the art to place (i.e., deposit) successive layers onto a layer functioning as a substrate (32) during a stacking process. Applicant's attention is further drawn to the following disclosure of Meitav (claim 12 of the reference):

12. An electrochemical energy storage device as in claim 10, wherein said at least one layer of a metal, a metal alloy, a metallic film or a combination or mixture thereof is disposed onto said substrate by one of the group of techniques consisting of:  
vacuum deposition;  
flame spray coating;  
molten dip bath;  
heat lamination;  
electro-less deposition;  
electroplating;  
plasma deposition;  
sputtering; and  
propellant spray/air brush of metal particles in a carrier.

Thus, Meitav contemplates the use of thin-film deposition techniques such as sputtering to fabricate at least a portion of the apparatus. This disclosure would suggest to a skilled artisan that the entire apparatus could be made by depositing (placing) successive layers upon a substrate. Accordingly, the disclosure of Meitav is still considered to render obvious the claimed subject matter.

*Conclusion*

4. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan, can be reached at (571) 272-1292. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

Art Unit: 1745

applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jonathan Crepeau  
Primary Examiner  
Art Unit 1745  
December 13, 2006